



To: City of Hartford

Date: May 23, 2016

Subject: Peer Universe Ranking Analysis

Perspective on the Public Fund Universe & the Use of Universe Rankings: The Public Fund universe includes a broad range of roughly 100 public fund participants of varying sizes, asset allocation, and investment objectives. Due to the size of the universe, the peer rankings serve as a somewhat useful tool when paired in conjunction with more traditional and thoughtful analysis. As such, NEPC believes that peer rankings should be considered secondary to the investment goals/objectives detailed in the investment policy statement.

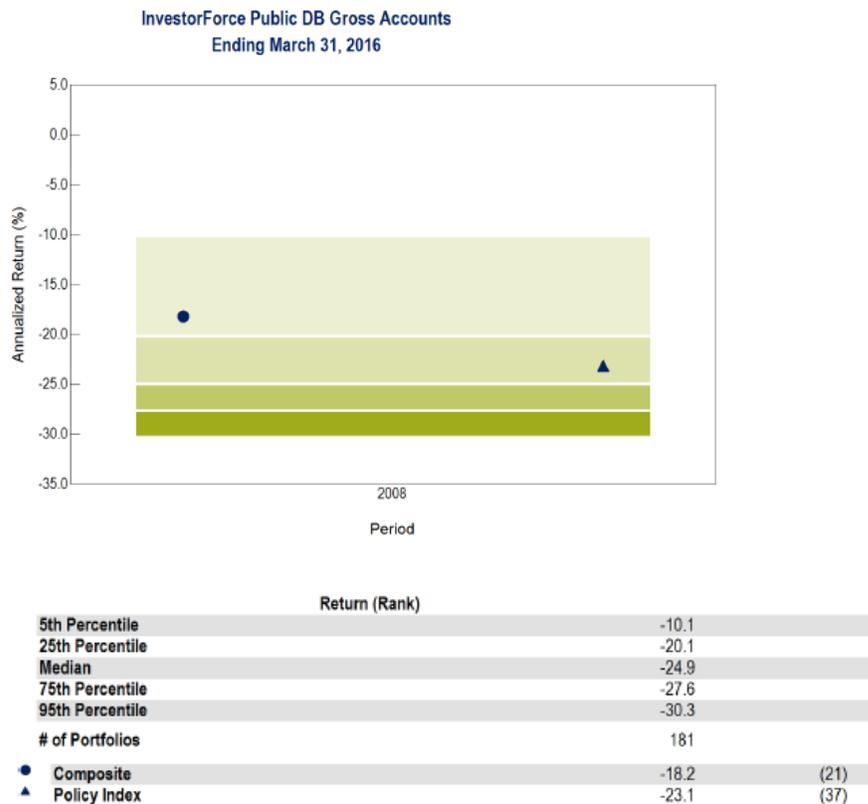
It is important to be knowledgeable of the differences in the universe participants when comparing rankings. Each participant will have different asset allocations based on their respective investment goals/objectives and, in part, due to their size. Thus, a simple “apples to apples” comparison of one fund’s return to another is problematic. Generally, the larger sized Public Funds (as defined by \$1 billion or greater in assets) tend to have a more diversified asset allocation focused on global and, in some cases, alternative investments, in order to mitigate risk and the potential for loss. Over the past 5 years investors with more diversified asset allocations have experienced headwinds due to central bank policy, the strength of the US Dollar, and growth/political issues abroad. As such, smaller funds with a larger focus on U.S. only investments, in particular equities, have performed the best during this time frame. Please see the below chart for further details. With the Fed rate hike looming, central bank policy action switching to Europe and Japan, and the weakening of the US Dollar to start 2016, it is expected that a domestically focused and less-diversified portfolio will face headwinds moving forward.

		5 Year Return			
		Equities		Fixed Income	
Global	Domestic	U.S. Equities	11.6%	US BC Agg.	3.8%
	Global	Int'l Equities	2.3%	Global Bonds	1.2%
		EM Equities	-4.1%	EM Debt	-2.0%

Q4 2015 rankings relative to Q1 2016: The headwinds sophisticated and diversified investors have faced over the past 5 years are starting to show signs of reversing and have provided tail winds to performance to start 2016. MERF’s asset allocation and diversified structure resulted in MERF ranking in the 13th and 20th percentile of the universe for the trailing 3 month and 1 year periods ending March 31st, 2016.



The Fund's allocation has been structured to mitigate the probability of loss in a given period while still meeting the fund's assumed rate of return over a full market cycle. Capital preservation is paramount in ensuring the financial health of the fund and its ability to provide future benefits. MERF has been successful in its goal of downside protection, as detailed in the below, which highlights its performance during the global financial crisis. While the S&P 500 and universe median was down -37.0% and -24.9%, respectively, MERF benefited from its diversification and downside protection and ranked in the top quartile of the universe.



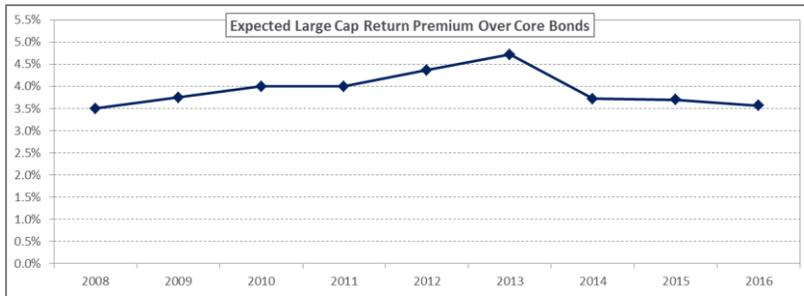
In conclusion there are several key factors that have affected performance in the last five years: (1) Diversification has not paid in the extraordinary equity market that has been experienced during this time period coupled with the associated low volatility. A passively managed large cap portfolio would have yielded the best results. We do not expect the next five years to yield the same results and (2) Active management did not pay off during this time period – the post crisis move by the fed created an environment where the markets



tended to move all in one direction. As such an active manager would have to take an outsized bet in certain sectors to result in strong incremental return. We believe that the fall out of the low volatile market is nearing an end. The markets have already shown significant volatility in 2016 YTD. The result will likely be excess returns "alpha" from strong active managers.

Please see return assumption chart:

Geometric Expected Return			
Asset Class	2015	2016	2016-2015
Cash	1.75%	1.50%	-0.25%
Treasuries	1.75%	1.75%	
IG Corp Credit	3.25%	3.75%	0.50%
MBS	2.00%	2.00%	
Core Bonds*	2.30%	2.46%	0.16%
TIPS	2.25%	2.50%	0.25%
High-Yield Bonds	4.00%	5.25%	1.25%
Bank Loans	4.50%	5.50%	1.00%
Global Bonds (Unhedged)	1.00%	1.00%	
Global Bonds (Hedged)	1.13%	1.09%	-0.04%
EMD External	4.50%	4.75%	0.25%
EMD Local Currency	5.50%	6.50%	1.00%
Large Cap Equities	6.00%	6.00%	
Small/Mid Cap Equities	6.00%	6.25%	0.25%
Int'l Equities (Unhedged)	7.00%	7.25%	0.25%
Int'l Equities (Hedged)	7.39%	7.57%	0.18%
Emerging Int'l Equities	9.00%	9.75%	0.75%
Private Equity	8.50%	8.50%	
Private Debt	7.50%	7.50%	
Private Real Assets	8.00%	8.25%	0.25%
Real Estate	6.50%	6.50%	
Commodities	5.25%	4.50%	-0.75%
Hedge Funds	5.75%	5.75%	



Source: Bloomberg, Morningstar Direct, NEPC

NEPC 5-7 Year Assumptions

	Long Term Avg	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cash	3.42% ¹	4.00%	3.00%	2.00%	2.00%	1.25%	0.75%	1.50%	1.75%	1.50%
Core Bonds	7.70% ²	5.00%	5.50%	3.75%	3.00%	2.88%	2.03%	2.53%	2.30%	2.43%
Large Cap	10.05% ¹	8.50%	9.25%	7.75%	7.00%	7.25%	6.75%	6.25%	6.00%	6.00%
Int'l Developed	8.84% ³	9.00%	9.75%	8.00%	7.00%	7.75%	7.75%	7.25%	7.00%	7.25%

1. Reflects average annual return since 1926

2. Reflects average annual return since 1976

3. Reflects average annual return since 1970

The risk premium and expected returns for the capital markets has come down in the last five years. While recent year performance is lower than the actual results posted, given current valuations, there is a likely probability of returns reverting to the mean and being muted over the next five years in areas such as US equities. Non-US equities coupled with the stimulus that we see by the ECB and the B of J – results in a high probability that growth and hence return opportunities will revert to these areas. This provides a basis that the benefits of diversification will return to the capital markets.